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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/994,867 | 11/28/2001 | Thomas J. Suleski | DOC.075 | 9802 |
| 30310 | 7590 | 06/15/2004 | EXAMINER | |
| DIGITAL OPTICS CORPORATION 9815 DAVID TAYLOR DRIVE CHARLOTTE, NC 28262 | | | MCPHERSON, JOHN A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1756 | |
| DATE MAILED: 06/15/2004 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,867

Applicant(s)

SULESKI ET AL.

Examiner

John A. McPherson

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-11, 15-28 and 33 is/are rejected.
- 7) ☒ Claim(s) 12-14, 29-32, 34 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/15/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II, claims 2-35 in the response filed 3/15/04 is acknowledged.

Claim 1 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 5, 10-11, 19, 21, 24 and 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,024,726 (US '726). US '726 discloses a method of producing a diffraction grating comprising the steps of etching a substrate **1** to produce a portion of a diffraction grating, covering the etched portion of the diffraction grating with a resist **6** (i.e. corresponding to the protective layer of the present invention), etching a diffraction grating into another portion of the substrate, and removing the resist. See column 3, lines 20-38 and Figures 1(e)-(g).

3. Claims 2, 4, 8, 10-11, 15, 18, 21, 23, 26 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,225,039 (US '039). US '039 discloses a

method of producing a diffraction grating comprising the steps of forming a first diffraction grating pattern of a first material having a reference pitch on a substrate, coating a second material on both the first material and an exposed portion of the substrate in a region where a second diffraction grating having a pitch which is the reverse of the reference pitch of the first diffraction grating pattern is to be formed, removing the first material by lift off to obtain the second diffraction grating pattern on the second diffraction grating region, etching the substrate using the first diffraction grating as an etching mask to form the first diffraction grating, etching the substrate with the second diffraction grating as an etch mask to obtain a second diffraction grating continuous with the first diffraction grating, wherein both the first and second etchings utilize protection layers **67** and **69**, respectively. See the abstract; column 6, line 30 to column 7, line 33; and Figures 6A-M.

4. Claims 2, 7, 10-11 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 8-082704 (JP '704). JP '704 discloses a method for producing a phase shift diffraction grating comprising the steps of forming a region of a resist having a tall height on a substrate, forming regions of high diffraction grating patterns [in reverse] and low diffraction grating patterns, etching the low diffraction grating patterns into the substrate, forming a dielectric film over the entire surface of the substrate (thereby simultaneously forming a protective layer over the low diffraction grating while forming an etch mask pattern for the high diffraction grating), lifting off the resist and

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overlying dielectric film to invert the high pattern regions, and etching the high diffraction grating pattern into the substrate. See the abstract and Figure 1.

5. Claims 2-6, 10-11, 16-17, 19-22, 24-25, 27-28 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-235105 (JP '105). JP '105 discloses a method of manufacturing microlens comprising the steps of forming a mask layer on a substrate, partially etching the mask layer such that a portion of the mask is made to remain on the substrate as an alignment mark, forming a protective layer on the alignment mark portion of the mask, and etching concave microlens parts into the substrate. See the abstracts and Figures 1-2.


Allowable Subject Matter

6. Claims 12-14, 29-32 and 34-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. McPherson whose telephone number is (571) 272-1386. The examiner can normally be reached on Monday through Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John A. McPherson
Primary Examiner
Art Unit 1756

JAM
6/9/04